

### ABSTRACT OF THE DISCLOSURE

A vacuum insulating glass (IG) unit and method of manufacturing the same. A peripheral or edge seal (11) of a vacuum IG unit is formed utilizing microwave energy (17) in order to enable tempered glass sheets (2, 3) of the IG unit to retain a significant portion of their original temper strength. In certain exemplary embodiments, the edge seal may be formed of glass frit or solder glass. In certain embodiments, at least a portion (12, 12a, 301) of the edge seal material may be deposited on one or both substrates prior to a thermal tempering process so that during tempering the edge seal material is permitted to diffuse into (i.e., bond to) the glass substrate(s) (2, 3).

10 Optionally, additional edge seal material (303) may be added after tempering. The final edge seal (11) is preferably formed via microwave heating (17) of the edge seal material.